

Cytotoxic Chemotherapy Tooth Ache Following Chemotherapy: a Rare Case Report

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Abstract

Currently, localized pulpalgia is listed as a rare manifestation of chemotherapy treatments in patients with malignant tumors. The neuropathy originated from neurotoxicity of anticancer drugs is usually described as a diffuse jaw pain or numbness in orofacial structures. This article reports localized tooth pain as a possible outcome of administrating high dosage chemotherapy drugs particularly in the last cycles of application.

Keywords: Chemotherapy; Cytotoxic; Tooth ache

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Case report

A 52 -year old female with intense pain (Visual Analogue Scale- VAS 10) [1] in the left maxillary first molar was referred to a private dental clinic for any treatment possible to relieve the pain. Her face was pale, and the severity of the pain made her sleepless the night before. She said that she was diagnosed as having Non Hodgkin's Lymphoma (NHL) 5 months earlier and had been under anti lymphoma chemotherapeutic treatments since then. Clinical examinations of the involved tooth did not show decay or past crown restoration [2]. She had a good oral hygiene and did not have any periodontal problems. The tooth did not show abrasion or attrition lesion, and no gingival recession was seen around it. The sensation due to lack of cementum, in Cemento Enamel Junction (CEJ) area was ruled out as well. Vertical and horizontal percussion and also vestibular palpation tests caused severe tooth ache. In addition, the tooth was very sensitive to cold water and air stimulation. Following careful radiographic and clinical examinations, vertical root fracture and cracks in crown were also ruled out. After interviewing the patient, and consulting her oncologist, it was revealed that the tooth did not have any symptoms of pain, tenderness or discomfort before the administration of chemotherapeutic drugs. After consulting her oncologist and further observation of the applied anti lymphoma protocol of the patient, it was found that the pain had been commenced after administration of Cyclophosphamide chemotherapy drugs and had intensified in the last cycles of its administration. Due to the

severity of the pain, a through root canal treatment was performed on the tooth after obtaining the patient's agreement.

The tooth was desensitized by infiltration of 2% Epinephrine-Lidocain solution (Daroupakhsh-Iran). Moreover, an emergency pulpotomy treatment was performed on the tooth at this session. Then, the root canal pulp was extirpated by a broach (Maillferr – Swiss) which significantly relieved the tooth pain, and a temporary sedative restoration was applied on the treated tooth. Furthermore, another appointment was arranged for the patient to complete the root canal treatment, using Mtwo nickle-titanium rotary system (VDW-Munich- Germany) [3].

Discussion

According to the UK cancer research report in 2008, the incidence of Non- Hodgkin's Lymphoma (NHL) has increased by over 50% in the last 20 years [4, 5]. NHL is the third most common malignancy which affects the head and neck region after squamous cell carcinoma and salivary gland tumors, and its prevalence is 4% of all malignant tumors in the UK [6]. This malignancy mostly happens in patients over 60 years of age and is rare in people under the age of 40 [7]. In this article, we presented a NHL patient who was referred to our clinic due to intense pain in the first maxillary molar which had commenced after administration of the Cyclophosphamide chemotherapy drug and had intensified in the following cycle of administration. According to Sioka and Kyrstis (2009), Cyclophosphamide and its isomer ifosfamide may induce central manifestations of encephalopathy and

change mental status [8], and it is also stated that they can cause peripheral sensorimotor and autonomic neuropathy [9].

This case suggests that cytotoxicity induction of the Cyclophosphamide chemotherapy drug may cause peripheral neuropathy in sensory neurons of the teeth that could manifest as severe toothache needing instant pulp extirpation.

Conclusion

Peripheral neuropathy originated from cytotoxicity of chemotherapy drugs may cause severe localized pulpalgia in intact teeth.

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Conflict of Interest

The authors have no conflict of interest in this article.

Authors' Contribution

Maryam Kuzekanani diagnosed the disease, treated and followed up the case. Jahangir Haghani confirmed the radiographic features and diagnosis of the case.

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